

Serial No. 09/696,635
Filed: October 25, 2000

Docket No. 55190US009

Rejections under 35 U.S.C. § 103

Claims 31-40, of which claim 31 is the sole independent claim, stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Pat. No. 5,460,833 ("Andrews") in view of U.S. Pat. Nos. 5,188,822 ("Viccaro") and 5,188,822 ("Carmody"). Viccaro discloses benzoic acid for use as an antimicrobial agent in dental compositions. Carmody discloses salicylic acid as a antimicrobial agent in skin formulations. The Examiner states that "one of ordinary skill in the art would have reasonably expected that employing or adding benzoic or salicylic acid . . . in the antimicrobial composition of Andrews et al. would improve the antimicrobial effect for the composition of Andrews et al."

To establish a prima facie case of obviousness, three basic criteria must be met:

- 1) there must be some suggestion or motivation, either in the reference or the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings;
- 2) there must be a reasonable expectation of success;
- 3) the prior art reference, or combined references must teach or suggest all the claim limitations.

Moreover, the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicants' disclosure.

First, there is no teaching or suggestion in Andrews that would have led one of ordinary skill in the art to modify the formulations of Andrews to substitute either benzoic acid or salicylic acid as an enhancer for use with fruits, vegetables and seeds. Andrews (column 4, lines 44-56) identifies certain organic acids that may be used in the antimicrobial formulations described therein for use in disinfecting poultry. No general class of organic acids that includes benzoic acid or salicylic acid is identified as being suitable for use in the Andrews' formulations. The Examiner acknowledged that neither benzoic acid nor salicylic acid is among the specific organic acids identified in Andrews.

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Additionally, Applicants dispute the Examiner's conclusion that antimicrobial compositions would retain the same antimicrobial activity by substituting benzoic or salicylic acid in place of those listed in Andrews as an enhancer. There is no teaching or suggestion in the cited references or in knowledge generally available to one skilled in the art that the antimicrobial activity of such compositions remains sufficient to meet its intended application regardless of the individual antimicrobial constituents. On the contrary, Andrews recites that the combination of the specific components imparts the desired antimicrobial activity. Further, Andrews states that antimicrobial agents alone would not achieve the desired antimicrobial activity without adversely affecting the organoleptic characteristics of the poultry (i.e., taste, color, smell, etc.). See Andrews, Column 2, lines 49-54.

The Examiner reasons that since "all active composition components herein are known to be useful in antimicrobial compositions, it is considered obvious to combine them into a single composition to form a third composition useful for the very same purpose." This conclusion fails to recognize what those skilled in the art know: that efficacy characteristics of antimicrobial agents change in various applications, and particular requirements are necessary for use of antimicrobial agents in food applications, i.e., balancing antimicrobial activity against effect on taste and appearance.

Second, there is no teaching or suggestion in Andrews that would have provided one of ordinary skill in the art a reasonable expectation of success that benzoic acid or salicylic acid would be effective as an enhancer in an antimicrobial formulation such as that described in Andrews. Applicants assert that the antimicrobial activity of an antimicrobial composition developed for disinfecting poultry provides no guidance whatsoever with respect to the quantitative antimicrobial activity of even the identical composition when used on a different organic surface, i.e., plant and plant parts such as fruits, vegetables, and seeds. Thus, there is no teaching or suggestion in Andrews that would have led one of ordinary skill in the art to successfully modify the antimicrobial poultry formulations of Andrews as a disinfectant for fruits, vegetables and seeds.

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Secondary References

Secondary references Viccaro and Carmody do not cure the deficiencies of Andrews for the following reasons. As an initial matter, there is no suggestion or motivation contained in any of the secondary references to combine their teachings with the Andrews reference, and the Examiner has not identified any such motivation or suggestion. Also, even were the combinations proper, each of the combined references fails to suggest the present claims.

Specifically, the Viccaro reference is directed to an oral composition for application to teeth. While Viccaro discloses benzoic acid as an antimicrobial agent that dissolves in Viccaro's formulation for reducing bacteria that produce plaque, no efficacy data is provided regarding bacteria reduction. Further, Viccaro lacks any suggestion for combining its teaching of benzoic acid with Andrews for use in disinfection of fruit, vegetables, and seeds acceptable for human consumption.

The Carmody reference is generally directed to treating skin disorders with an antimicrobial agent suspended in a hydrophobic macroporous highly crosslinked copolymer. Again, the Carmody reference fails to teach either efficacy data for salicylic acid or its effective application for use in disinfecting fruit, vegetables, and seeds while remaining acceptable for human consumption.

Thus, none of the references can be combined (and are not properly combined) to render the present claims obvious. Applicants submit, therefore, that rejected claims 31-40 are patentable under 35 U.S.C. § 103(a), and respectfully request that the rejections be withdrawn.

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CONCLUSION

In view of the amendments and remarks provided above, Applicants submit that all claims under consideration are in condition for allowance. Examination and allowance of the claims is respectfully requested.

Respectfully submitted,

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